

**WHAT IS CLAIMED IS:**

1. A process for loading a biological sample comprising;  
loading a biological sample with a solute by fluid phase endocytosis to produce an internally loaded biological sample.
2. The process of Claim 1 wherein said loading a biological sample by fluid phase endocytosis comprises fusing within the biological sample a first matter with a second matter to produce a fused matter.
3. The process of Claim 2 wherein said first matter comprises the solute.
4. The process of Claim 2 wherein said first matter comprises a vesicle having the solute.
5. The process of Claim 2 wherein said second matter comprises a lysosome.
6. The process of Claim 4 wherein said second matter comprises a lysosome.
7. The process of Claim 2 wherein said fused matter comprises the solute.
8. The process of Claim 6 wherein said fused matter comprises the solute.
9. The process of Claim 2 wherein said loading a biological sample by fluid phase

endocytosis additionally comprises transferring the solute from the fused matter within the biological sample.

10. The process of Claim 8 wherein said loading a biological sample by fluid phase endocytosis additionally comprises transferring the solute from the fused matter within the biological sample.

11. The process of Claim 9 wherein the solute is transferred from the fused matter into a cytoplasm within the biological sample.

12. The process of Claim 10 wherein the solute is transferred from the fused matter into a cytoplasm within the biological sample.

13. The process of Claim 2 wherein said fused matter comprises a lower pH than a pH of the first matter.

14. The process of Claim 12 wherein said fused matter comprises a lower pH than a pH of the first matter.

15. The process of Claim 2 wherein said fused matter comprises a less than about 6.5.

16. The process of Claim 1 wherein said biological sample includes a biological sample selected from a group of biological samples comprising a platelet and a cell.

17. The process of Claim 1 wherein said solute comprises trehalose.

18. A biological sample produced in accordance with the process of Claim 1.

19. A process for preparing a dehydrated biological sample comprising:

    providing a biological sample selected from a mammalian species;

    loading the biological sample with a solute by fluid phase endocytosis to produce a loaded biological sample; and

    drying the loaded biological sample to produce a dehydrated biological sample.

20. The process of Claim 19 wherein said loading of the biological sample with a solute comprises loading of the biological sample with an oligosaccharide from an oligosaccharide solution.

21. The process of Claim 20 wherein said loading with an oligosaccharide includes increasing a loading efficiency of the oligosaccharide into the biological sample by maintaining a concentration of the oligosaccharide in the oligosaccharide solution at less than a certain concentration.

22. The process of Claim 21 wherein said biological sample comprises a platelet and said certain concentration comprises about 50 mM.

23. The process of Claim 20 wherein said loading with an oligosaccharide includes loading with a loading efficiency ranging from about 45% to about 50 % for the oligosaccharide solution having an oligosaccharide concentration ranging from about 20 mM to about 30 mM.

24. The process of Claim 20 wherein said oligosaccharide comprises trehalose.

25. The process of Claim 21 wherein said oligosaccharide comprises trehalose.

26. The process of Claim 20 wherein said loading is without a fixative.

27. The process of Claim 19 additionally comprising lyophilizing the biological sample and prehydrating the lyophilized biological sample.

28. The process of Claim 27 wherein said prehydrating comprises exposing the lyophilized biological sample to moisture saturated air.

29. The process of Claim 19 wherein said biological sample comprises a platelet, and said process additionally comprises prehydrating the lyophilized platelet until the water content of the lyophilized platelet ranges from about 35 % by weight to about 50 % by weight.

30. The process of Claim 27 additionally comprising rehydrating the prehydrated lyophilized biological sample.

31. A process for preparing a dehydrated biological sample comprising:

disposing a biological sample in an oligosaccharide solution for loading an oligosaccharide from the oligosaccharide solution into the biological sample;

preventing a decrease in a loading efficiency gradient in the loading of the oligosaccharide into the biological sample; and

drying the biological sample to produce a dehydrated biological sample.

32. The process of Claim 31 wherein said preventing a decrease in a loading efficiency gradient in the loading of the oligosaccharide into the biological sample comprises maintaining a concentration of the oligosaccharide in the oligosaccharide solution below a certain concentration.

33. The process of Claim 32 wherein said biological sample comprises a platelet and said certain concentration comprises about 50 mM.

34. The process of Claim 31 wherein said loading comprises loading by fluid phase endocytosis.

35. The process of Claim 31 wherein said biological sample comprises a platelet, and wherein said loading with an oligosaccharide includes loading with a loading efficiency ranging from about 45% to about 50 % for the oligosaccharide solution having an oligosaccharide concentration ranging from about 20 mM to about 30 mM.

36. The process of Claim 31 wherein said oligosaccharide comprises trehalose.

37. The process of Claim 31 wherein said loading is without a fixative.

38. The process of Claim 31 additionally comprising prehydrating the dried biological sample.

39. The process of Claim 38 wherein said prehydrating comprises exposing the dried biological sample to moisture saturated air.

40. The process of Claim 31 additionally comprising prehydrating the dried biological sample until the water content of the dried biological sample ranges from about 35 % by weight to about 50 % by weight.

41. The process of Claim 38 additionally comprising rehydrating the prehydrated dried biological sample.

42. The process of Claim 31 wherein said preventing a decrease in a loading efficiency gradient in the loading of the oligosaccharide into the biological sample comprises maintaining a positive gradient of loading efficiency to concentration of the oligosaccharide in the oligosaccharide solution.

43. The process of Claim 31 wherein said preventing a decrease in a loading efficiency gradient in the loading of the oligosaccharide into the biological sample comprises maintaining a positive gradient of loading efficiency (%) to concentration (mM) of the oligosaccharide in the oligosaccharide solution.

44. The process of Claim 42 wherein said oligosaccharide comprises trehalose.

45. The process of Claim 43 wherein said oligosaccharide comprises trehalose.

46. A process for preparing a dehydrated composition comprising:

disposing platelets in an oligosaccharide solution for loading an oligosaccharide from the oligosaccharide solution into the platelets;

preventing a decrease in a loading gradient in the loading of the oligosaccharide into the platelets; and

lyophilizing the platelets.

47. The process of Claim 46 wherein said preventing a decrease in a loading gradient in the loading of the oligosaccharide into the platelets comprises maintaining a concentration of the oligosaccharide in the oligosaccharide solution below about 50 mM.

48. The process of Claim 46 wherein said loading comprises loading by fluid phase endocytosis.

49. The process of Claim 47 wherein said loading comprises loading by fluid phase endocytosis.

50. The process of Claim 46 wherein said loading with an oligosaccharide includes loading with a loading efficiency ranging from about 45% to about 50 % for the oligosaccharide solution having an oligosaccharide concentration ranging from about 20 mM to about 30 mM.

51. The process of Claim 46 wherein said oligosaccharide comprises trehalose.

52. The process of Claim 46 wherein said loading is without a fixative.

53. The process of Claim 46 additionally comprising prehydrating the lyophilized platelets.

54. The process of Claim 53 wherein said prehydrating comprises exposing the lyophilized platelets to moisture saturated air.

55. The process of Claim 46 additionally comprising prehydrating the lyophilized platelets until the water content of the lyophilized platelets ranges from about 35 % by weight to about 50 % by weight.

56. The process of Claim 53 additionally comprising rehydrating the prehydrated lyophilized platelets.

57. The process of Claim 46 wherein said preventing a decrease in a loading gradient in the loading of the oligosaccharide into the platelets comprises maintaining a positive gradient of concentration of oligosaccharide loaded into the platelets to concentration of the oligosaccharide in the oligosaccharide solution.

58. The process of Claim 57 wherein said oligosaccharide comprises trehalose.